

IN THE SPECIFICATION:

Please amend the specification as follows:

Please substitute the paragraph beginning at page 2, line 24, and ending on page 3, line 1, with the following.

-- The conventional semiconductor exposure apparatus needs to measure the position of a pattern on the wafer 8 below the alignment scope 5 before exposure operation. This is one of the major factors which ~~limit~~ limits the throughput of the apparatus. --

Please substitute the paragraph beginning at page 3, line 14, with the following.

-- In designing the projection system 4, the above-mentioned focus measurement system is arranged below the projection system and, thus, a large back focal distance is necessary. This imposes considerable constraints on the design of the projection system 4. Along with a recent increase in the numerical aperture (NA) of the projection system 4, this problem has become serious. The problem will become serious in a mirror projection system of a future EUV exposure apparatus as well. --

Please substitute the paragraph beginning at page 2, line 17, and ending on page 3, line 1, with the following.

-- When predetermined processes end at the exposure and measurement positions, the fine adjustment stages are separated from the coarse adjustment stages and are interchanged. The wafer having undergone a measurement operation is moved to the exposure position for the

exposure operation. Reference marks (not shown) are formed on the edges of the wafer chucks and are measured at the measurement and exposure positions. With this operation, measurement results (alignment and focus measurement results) at the measurement position are accurately reflected in exposure, and accurate alignment and focus are implemented at the exposure position. --

Please substitute the paragraph beginning at page 7, line 7, with the following.

-- As an example similar to the method shown in Fig. 2B, there is available the method discussed in Japanese Laid-Open No. 10-163098. --

Please substitute the paragraph beginning at page 7, line 24, with the following.

-- As another example similar to the method shown in Fig. 2B, there is available the method discussed in Japanese Patent No. 3,045,947. --

Please substitute the paragraph beginning at page 9, line 9, with the following.

-- Method 2 basically has advantages similar to those of method 1. In this method, two stages including stage surface plates are completely independent, and they never exert reaction forces on each other. For this reason, even if the speed of each stage increases, the precision of scan synchronization between a reticle and a wafer can be kept high. Since method 2 basically adopts a wafer chuck transport method, ~~and~~ it is relatively easy to implement the chuck unloading function. --

Please substitute the paragraph beginning at page 11, line 5, with the following.

-- To solve the above-mentioned problems and to achieve the objects, according to the present invention, there is proposed a method of arranging two independent fine adjustment stages on one coarse adjustment stage and simultaneously performing all of focus measurement and part of alignment measurement in parallel with an exposure operation. --

Please substitute the paragraph beginning at page 11, line 17, with the following.

-- According to the present invention, a more compact common platform, which can be applied to various semiconductor exposure apparatuses, can relax constraints on the design of exposure and measurement units, and can increase the speed and precision, can be implemented. --

Please substitute the paragraph beginning at page 11, line 23, and ending on page 12, line 5, with the following.

-- Other objects and advantages besides those discussed above shall be apparent to those skilled in the art from the description of a preferred embodiment of the invention which follows. In the description, reference is made to the accompanying drawings, which form ~~apart a part~~ thereof, and which illustrate an example of the invention. Such an example, however, is not exhaustive of the various embodiments of the invention, and therefore reference is made to the claims which follow the description for determining the scope of the invention. --

Please substitute the paragraph beginning at page 12, line 16, with the following.

-- Fig. 3 is a ~~plain~~ plan view showing the schematic arrangement of a semiconductor exposure apparatus according to an embodiment of the present invention; --

Please substitute the paragraph beginning at page 12, line 19, with the following.

-- Figs. 4A and 4B are ~~plain~~ plan and front views, respectively, of a coarse adjustment type; --

Please substitute the paragraph beginning at page 12, line 21, with the following.

-- Figs. 5A and 5B are ~~plain~~ plan and front views, respectively, of a prealignment unit; --

Please substitute the paragraph beginning at page 12, line 23, with the following.

-- Figs. 6A to 6D are a ~~plain~~ plan view, a front view in wafer loading, a front view upon completion of coarse alignment, and a front view in wafer unloading, respectively, of the coarse alignment unit; --

Please substitute the paragraph beginning at page 12, line 27, and ending on page 13, line 2, with the following.

-- Figs. 7A to 7C are ~~plain~~ plan, front, and side views, respectively, showing the structure of a chuck pipe line; --

Please substitute the paragraph beginning at page 13, line 20, with the following.

-- Fig. 15 is a view for explaining the outline of a chuck reference mark measurement operation; --

Please substitute the paragraph beginning at page 17, line 2, with the following.

-- Fig. 3 is a ~~plain~~ plan view showing the outline of the semiconductor exposure apparatus according to the embodiment of the present invention. --

Please substitute the paragraph beginning at page 20, line 12, with the following.

-- Figs. 4A and 4B are ~~plain~~ plan and front views, respectively, of the coarse adjustment stage according to the embodiment of the present invention. --

Please substitute the paragraph beginning at page 25, line 15, with the following.

-- Figs. 5A and 5B are ~~plain~~ plan and front views, respectively, of the prealignment unit of the semiconductor exposure apparatus according to the embodiment of the present invention. --

Please substitute the paragraph beginning at page 28, line 18, with the following.

-- Figs. 6A to 6D are a ~~plain~~ plan view, a front view in wafer loading, a front view upon completion of coarse alignment, and a front view in wafer unloading, respectively, of the coarse

alignment unit 110 of the semiconductor exposure apparatus according to the embodiment of the present invention. --

Please substitute the paragraph beginning at page 28, line 25, and ending on page 29, line 15, with the following.

-- As shown in Figs. 6A to 6D, reference numeral 110 denotes the entire coarse alignment unit; 111, the coarse alignment scope; 112, the coarse focus sensor unit; 113, the coarse chuck stage which can move in the X direction; 401, an objective lens for measuring a chuck reference mark of the coarse alignment scope 111; 402, an objective lens for detecting a wafer prealignment mark of the coarse alignment scope 111; 403, (five) fiber sensors of the coarse focus sensor unit 112 to measure the height of the upper surface of a chuck reference plate (to be described later) and the upper surface of a wafer; 405, a chuck during coarse alignment; 406, a wafer during coarse alignment; 407, a chuck support unit which holds the chuck 405 from [[the]] below and can perform fine vertical and rotation driving; and 408, three wafer support pins which can finely drive in the X, Y, and  $\theta$  directions and can operate in the Z direction. --

Please substitute the paragraph beginning at page 32, line 19, and ending on page 33, line 2, with the following.

-- Fig. 6B shows wafer loading. The three wafer support pins 408 extend upward from the coarse chuck stage 113 through the chuck 405. The wafer is placed on the three wafer support pins by the loading hand 105. The three wafer support pins 408 ~~retracts~~ retract into the

coarse chuck stage 113 and ~~passes~~ pass the wafer 406 to the chuck 405. Then, the coarse chuck stage 113 starts moving to the left. When the wafer 406 comes to below the coarse focus sensor unit 112, the fiber sensors 403 start measuring the heights of the upper surfaces of the chuck reference plate and wafer. --

Please substitute the paragraph beginning at page 35, line 11, with the following.

-- Figs. 7A to 7C are ~~plain~~ plan, front, and side views, respectively, showing the structure of the chuck pipe line. Figs. 8A and 8B are an enlarged view of the upper surface of a chuck and a sectional view including a chuck support unit on a fine adjustment stage. --

Please substitute the paragraph beginning at page 35, line 16, and ending on page 36, line 4, with the following.

-- As shown in Figs. 7A to 7C, reference numeral 500 denotes a chuck; 501, holes through which the three wafer support pins 408 of the coarse chuck stage 113 pass in the coarse alignment unit 110; 502, wafer vacuum ( Vac.) portions to which wafer Vac. pipes from the chuck hand 123 are connected; 503, wafer Vac. valves at the inlets of the wafer Vac. portions 502; 504, wafer Vac. portions to which wafer Vac. pipes from the loading plate 120 are connected; 505, wafer Vac. valves at the inlets of the wafer Vac. portions 504; 506, a wafer Vac. portion to which a wafer Vac. pipe from the exposure fine adjustment stage 62 or measurement fine adjustment stage 72 is connected; 507, a wafer Vac. valve at the inlet of the wafer Vac.

portion 506; and 508, a wafer chucked and held on the chuck 500 by a Vac. (negative pressure). --

Please substitute the paragraph beginning at page 37, line 23, and ending on page 38, line 4, with the following.

-- Fig. 9A is a ~~plain~~ plan view showing the chuck and 123 and loading plate 120 at the chuck loading position 121; and Figs. 9B and 9C show how the chuck moves from the chuck hand 123 to the loading plate 120. Fig. 10A is a ~~plain~~ plan view showing the loading plate 120 and fine adjustment top plate 511 at the chuck loading position 121; and Figs. 10B and 10C show how the chuck moves from the loading plate 120 to the fine adjustment top plate 511. --

Please substitute the paragraph beginning at page 45, line 15, with the following.

-- The operation of the wafer and chuck has sequentially been described mainly from the aspect of a transport operation. The units in an actual exposure apparatus operate in parallel. An explanation with an emphasis on this parallel operation will be given after a description of the operation of the stage unit in, e.g., alignment measurement and exposure. --

Please substitute the paragraph beginning at page 56, line 21, and ending on page 57, line 4, with the following.

-- At this time, as for the heights of the reference plates at the four corners of the measurement chuck 71, the reference plane for the reference plates ~~are~~ is calculated from the



measurement results of the reference plates at the four corners by the coarse alignment unit. The measurement fine adjustment stage 72 drives the measurement chuck 71 in the height and tilt directions before the reference mark position measurement such that the reference plane coincides with the measurement image plane of the alignment scope 5. --

Please substitute the paragraph beginning at page 58, line 13, with the following.

-- The alignment scopes 5 and 650 perform position measurement using input images from the high-magnification measurement CCD cameras 663 and 654 and, at the same time, perform measurement using the low-magnification measurement CCD cameras 662 and 653. If each reference mark falls outside a high-magnification measurement range, the coarse adjustment stage 73 and the exposure fine adjustment stage 62 or measurement fine adjustment stage 72 is driven such that the reference mark falls within the high-magnification measurement range. --

Please substitute the paragraph beginning at page 72, line 10, with the following.

-- In parallel with this, the focus detection system 7 on the measurement side performs focus measurement for the entire upper surface of chuck No. 2. --

Please substitute the paragraph beginning at page 79, line 16, with the following.

-- Fig. 21 shows an unloading operation. ~~Chuck~~ A chuck loading operation can be performed in a reverse order to that shown in Fig. 21 ~~in inverse order~~. --

Please substitute the paragraph beginning at page 82, line 1, with the following.

-- The present invention includes a case wherein the invention is achieved by directly or remotely supplying a program of software that implements a control flow for measurement and exposure operations of the aforementioned embodiment to a system or apparatus, and reading out and executing the supplied program code by a computer of that system or apparatus. In this case, software need not have the form of a program as long as it has the program function. --

Please substitute the paragraph beginning at page 82, line 17, with the following.

-- In this case, the form of a program is not particularly limited, and an object code, a program to be executed by an interpreter, script data to be supplied to an operating system (OS), and the like, may be used as ~~along~~ long as they have the program function. --

Please substitute the paragraph beginning at page 82, line 22, with the following.

-- As a recording medium for supplying the program, for example, a flexible disk, a hard disk, an optical disk, a magneto-optical disk, an MO, a CD-ROM, a CD-R, a CD-RW, a magnetic tape, a nonvolatile memory card, a ROM, a DVD (DVD-ROM, DVD-R), and the like, may be used. --

Please substitute the paragraph beginning at page 82, line 27, and ending on page 83, line 14, with the following.

-- As another program supply method, the program may be supplied by establishing connection to a home page on the Internet using a browser on a client computer, and downloading the computer program itself of the present invention or a compressed file containing an automatic installation function from the home page onto a recording medium such as a hard disk or the like. Also, the program code that forms the program of the present invention may be segmented into a plurality of files, which may be downloaded from different home pages. That is, the scope of the claims of the present invention includes a World Wide Web (WWW) server, which makes a plurality of users download a program file required to implement the functional process of the present invention by the computer. --

Please substitute the paragraph beginning at page 83, line 24, and ending on page 84, line 2, with the following.

-- The functions of the aforementioned embodiment may be implemented not only by executing the ~~read out~~ program code read out by the computer, but also by some of or all of actual processing operations executed by an OS, or the like, running on the computer, on the basis of an instruction of that program. --